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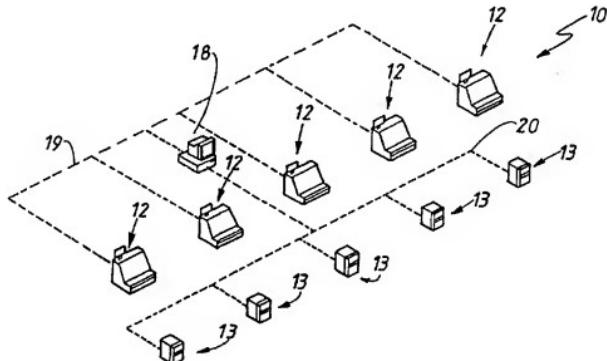


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: G07C 15/00, G07F 7/02, G07B 3/00, S04, G07G 1/12, 1/14	A1	(11) International Publication Number: WO 97/38399 (43) International Publication Date: 16 October 1997 (16.10.97)
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(54) Title: DISPENSING APPARATUS



(57) Abstract

Dispensing apparatus (10) is provided for dispensing lottery tickets (73) by the checkout operator at a retail outlet. The dispenser assembly (13) containing the tickets (73) is controlled by a central processing unit (18), connected to the cash registers (12), which records the dispensing of tickets (73) from said dispenser assembly (13). The dispenser assemblies (13) are removable for relocation to a service station at which the central processing unit (18) may be operated in a secure manner for loading and unloading the relocated dispenser with tickets to be dispensed or for repair, checking or servicing.

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**"DISPENSING APPARATUS"**

This invention relates to dispensing apparatus.

This invention has particular application to dispensing apparatus for dispensing lottery tickets or the like and for 5 the purposes of illustration, reference will be made hereinafter to such application. However, the dispensing apparatus of the present invention could be used for dispensing other articles such as place tickets or coupons or articles such as drugs, sweets or the like, and particularly 10 where the dispensing of the article is to be under strict control.

Lottery tickets are a popular form of gambling, particularly in the form of so-called "instant lottery" tickets where a ticket which is purchased includes a prize 15 portion which is printed under a temporary covering to be removed by the purchaser, usually by scraping away the temporary covering.

Such tickets are sold through many general retail outlets such as newsagents, stalls, convenience stores and 20 supermarkets and there is little control over the dispensing of the tickets. As a result the incidence of theft of such tickets has increased considerably. The theft may be by a member of the public or an employee of the retail outlet. This obviously results in a revenue loss to the retailers of 25 the lottery tickets and/or the lottery organizers.

Dispensing of lottery tickets, unlike edible consumables for example, can invoke emotions in purchasers who may not tolerate substitution of a dispensed ticket in lieu of the ticket selected, such as may be caused by a malfunction in a 30 ticket dispenser. Furthermore dispensing of instant lottery tickets demands prepayment and ticket sale supervision in order to ensure appropriate dispensing to avoid sale to underage persons or tampering with unpurchased tickets.

The present invention aims to alleviate at least one of

the above disadvantages and to provide dispensing apparatus which will reduce the incidence of theft of dispensed articles such as tickets, coupons or the like to be dispensed.

5 With the foregoing in view, this invention in one aspect resides broadly in dispensing apparatus including:-

a dispenser assembly containing articles to be dispensed;

control means for controlling the dispensing of said 10 articles by said dispenser assembly whereby during normal operation articles can be dispensed from said dispensing means only by operation of said control means, and

monitoring means for monitoring and recording the dispensing of articles from said dispenser assembly.

15 In a preferred embodiment of this invention, the control means includes an item key or button associated with a cash register whereby the item key may be actuated to dispense an article and to record the cost of the dispensing transaction with a total purchase rung up on the cash register. The item 20 key or button may be further associated with keypad which may be used to enter the number of articles to be dispensed.

Preferably the monitoring means logs each dispensing operation and includes a memory providing a searchable audit trail enabling the sale of tickets to be selectively accounted for. The monitoring means may automatically 25 attribute a time of sale to each logged dispensing operation or it may be operator sensitive, requiring an operator password or key to be entered for actuation of the dispensing apparatus.

30 The monitoring means and control means may include communication means operatively connecting each of a plurality of dispenser assemblies to a central processing or supervising unit for monitoring and recording the dispensing of articles from each of the dispenser assemblies.

35 Alternatively the or each dispenser assembly may include

its own memory means and be provided with a communication port or ports through which it may be interrogated or through which its relevant information may be downloaded to a central processing or supervising unit for monitoring and recording 5 the dispensing of articles from the or any such dispenser assembly.

The dispenser assembly may be a stand-alone machine or it may comprise one of a plurality of operator controlled dispenser assemblies each disposed, for example, adjacent a 10 respective cash register at a supermarket checkout station.

The communication means may include cable means providing electronic communications between respective dispenser assemblies and the central processing or supervising unit.

The central processing or supervising unit may also be 15 in communication with the cash registers by suitable communication means such as cables to monitor operation of each cash register and control operation of the respective dispenser assembly. The supervising unit may serve to actuate a selected dispenser assembly on actuation of an 20 associated cash register, actuation of the cash register being sensed by the supervising unit and causing actuation of the corresponding dispenser assembly.

It is preferred that the interface between the central processing or supervising unit and each cash register be such 25 that any cash sale keyed into the cash register in respect of an instant lottery is not registered as a sale and does not appear on the register printout or a display which tallies sales made to a customer until a ticket dispensed acknowledgement is received from the ticket dispenser 30 assembly. This ensures that money is not taken from a customer for purchase of a ticket until a dispensed ticket is available for supply to the customer.

For this purpose, the or each the cash register may be provided with a dedicated key or keys which when operated 35 will cause actuation of the dispenser assembly for dispensing

articles. The key or keys alternatively may comprise touch pads or touch sensitive regions of a VDU and/or a bar code reader for reading a bar code provided on each dispensed ticket. The cash register may further be provided with a 5 multiple or times key or touch pad to enable multiple dispensing of tickets. For example one key may be a key which indicates the article to be dispensed e.g. L for lottery ticket and the multiple key may be pressed to indicate the number of articles to be dispensed e.g. X 4 for 10 four articles to be dispensed.

The central processing or supervising unit may be arranged to sense or be informed of the initial number of articles in each dispenser assembly, to identify the dispenser assembly associated with each register and to 15 monitor the number of articles being dispensed by the dispensing assemblies.

Each dispenser assembly is suitably in the form of a module which can be locked into an operative position in communication with the central processing or supervising 20 unit. This may be achieved by arranging a cradle assembly at each desired dispensing location hard wired to the central processing or supervising unit and having a plug-in connection with a dispenser assembly module.

Furthermore, each dispenser assembly may be provided 25 with an identifying means which is readable by the central processing or supervising unit when a dispenser assembly is placed within the cradle assembly so as to enable the central processing or supervising unit to identify the dispenser assembly and control its operation. For this purpose, the 30 cradle may include a contact which engages with the identifying means on the dispenser assembly. Alternatively, other forms of identifying means may be used for this purpose including non-contact identifying and communication means.

The central processing or supervising unit thus may 35 sense which dispenser assembly is located in a particular

cradle associated with a particular cash register. The central processing or supervising unit may record the number of articles in a particular dispenser assembly and also the dispensing of articles from each dispenser assembly so that 5 an accurate record can be maintained of articles being dispensed and remaining within a dispenser assembly. In addition, the central processing or supervising unit may maintain, through its connection to the registers, an accurate record of the amount of money which should have been 10 collected for the articles being dispensed.

The dispenser assembly may include a dispenser unit or module which may be securely preloaded with articles to be dispensed at a secure loading station, for example in the office of the manager of the store in which the dispensing 15 assemblies are provided. After loading of the dispenser units in this manner, the articles in the dispenser units are suitably inaccessible except to authorised personnel and may not be removed from the dispenser units except by dispensing in the manner described above or by removal at the 20 loading station or by the authorised personnel.

The cash registers and an associated dispenser assembly may be installed in checkouts as used in supermarkets, self-service stores or the like or alternatively a dispenser assembly may be associated with a single cash register as 25 used in small retail outlets or the like. In a checkout or the like, the dispenser assembly may be provided at a secure location for example beneath the checkout counter and an outlet may be provided through which articles from the dispenser assembly may be dispensed. Such an outlet may be 30 in the form of a slot provided at the end of the checkout counter or in the top of the counter. Alternatively the dispenser assembly may be externally mounted and secured by an outer lockable cover.

Where a plurality of checkouts are provided in a store, 35 respective dispensing assemblies may be associated with each

checkout so as to be operable by the cash register associated with that checkout.

Indicating means may be provided for indicating the dispensing of articles from the checkout. Such means may 5 count up or count down the respective articles as they are dispensed. Such indicating means suitably comprises a visual display. Thus if four articles are required to be purchased at the register, the register operator will press the appropriate keys on the register which will be displayed on 10 the visual display, for example by the number four. As each article is dispensed by the dispenser assembly, the display will increment down so that a check is made of articles being dispensed. As an alternative, the display may count up as 15 each article is dispensed. The display may be a separate display or alternatively may be incorporated into the register.

In use and where a particular article held within the dispenser assembly is required to be purchased at the checkout, a check-out operator may operate the register to 20 indicate the sale of one or more of the articles, whereupon the control means through the supervising unit causes the dispenser assembly associated with that register to dispenses the selected number of articles. The number of articles purchased and dispensed are then recorded in conventional 25 manner on a register receipt which will also show the total amount payable.

In a further aspect, the present invention resides broadly in a method of dispensing articles from or adjacent a cash register, said method including:-

30 providing a dispenser assembly for holding a plurality of articles to be dispensed,

providing control means between said dispenser assembly and said cash register, and

operating said cash register to cause actuation of said 35 dispenser assembly through said control means for dispensing

articles from said dispensing apparatus.

A purchaser as well as purchasing articles such as lottery tickets from the dispenser assembly may also purchase other objects such as grocery lines at the same time. In 5 this instance, the total purchase price would be indicated to the purchaser on the receipt which shows the total amount payable. A breakdown is provided on the receipt showing the number of lottery tickets purchased and their cost. The total amount payable as is conventional is also displayed on 10 the cash register.

In order that this invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawing which illustrates a typical embodiment of the invention and wherein:-

- 15 FIG. 1 is a schematic illustrating a typical multi-station dispensing installation according to this invention;
- FIG. 2 illustrates a group of checkouts incorporating the dispensing installation of Fig. 1;
- 20 FIG. 3 is an enlarged view showing the Association of dispensers and cash registers of Fig. 1;
- FIG. 4 is a perspective view of a preferred form of dispenser module;
- FIG. 5 is a sectional view illustrating the locking arrangement between the dispenser module and the cradle assembly;
- 25 FIG. 6 is a perspective view of a stand alone machine according to a further embodiment of the invention;
- FIG. 7 is a top view of the apparatus illustrated in Fig. 6;
- FIGS. 8 and 9 illustrate the loading of tickets into the dispenser module, and
- 30 FIGS. 10 to 14 illustrate preferred functions of the central processing or supervising unit.
- 35 Referring initially to Figs. 1 to 3 it will be seen that

the dispenser apparatus 10 is adapted for installation into a plurality of checkout stations 11, such as at a supermarket. Each check-out station 11 includes a check-out cash register 12 as well as a dispenser assembly 13 which may be bench 5 mounted as illustrated in Fig 3 or concealed beneath the bench or counter 17 as illustrated in Fig. 2.

Each dispenser assembly 13 includes a dispenser unit 14, such as is illustrated in our co-pending International Patent Application No. PCT/AU96/00662 and an integral ticket holder 10 15 which includes a removable magazine 22 which locks into the dispenser unit 14. Tickets may be dispensed from each dispenser unit 14 through a dispenser aperture 16 which in can be arranged at the end of the counter 17 of a check-out station 11. The bench top mounted dispenser assemblies 13 15 may be mounted beside the cash register as illustrated in Fig. 3 at the alternate position 25 of Fig. 2.

A supervising CPU unit 18 is operatively connected by a communication cable 19 to each checkout register 12 and by a further communication cable 20 to each dispenser assembly 13. 20 Each ticket holder 15 may be loaded by a supervisor, preferably at a secure location, who is able to enter details of the loaded tickets, including their number, into data storage means of the supervising CPU unit 18.

The information stored may include identification of the dispensing unit 14 and its associated register 12. Each 25 dispenser unit 14 is interchangeable with the units 14 in any of the check-out stations 11 and for this purpose each dispensing unit 14 is supported by a cradle assembly 23 which is secured on each checkout counter 17 to receive any one of 30 a plurality of loaded dispensing units 14.

Referring particularly to Figs. 3 to 5 it will be seen that each dispenser assembly 13 includes a ticket dispensing unit 14 of the type illustrated in our co-pending International Patent Application No. PCT/AU96/00662 which has 35 stepper motors controlling the feed, folding and severing

functions and state or condition monitors for controlled remote operation and which are able to dispense single or multiple tickets from a fan fold stack of tickets mounted in a storage space at the rear of the ticket dispensing unit 14.

5       In this embodiment the ticket dispensing unit 14 has a pair of side walls 26 separated by a vertical transverse wall 27 which divides the ticket dispensing unit 14 from the ticket storage space between the side walls 26. An enclosure 29 extends about the ticket dispenser assembly 13 and locks 10 thereto through a key operated lock 30 which has a locking tongue 31 which may be moved by the key into or from engagement with a slot 32 formed in the upper portion of the transverse wall 27.

15     The enclosure 29 includes a transparent panel 33 through which the next ticket to be dispensed may be viewed and a pivotable tray 35 into which the severed ticket falls. The tray 35 may be pivoted from its normal position, shown in dotted outline at 36, at which it covers the key operated base lock assembly 37 which has a tongue 38 adapted to pivot 20 down behind an upstanding abutment 39 on the base wall 40 of the supporting cradle assembly 23. Slotted side walls 41 are formed integrally with the base wall 40 and receive transverse pins 42 which extend outwardly from the opposite side walls 26 of the dispenser assembly 13 in slots 43.

25     The slots 43 include an upstanding entry portion and a rearwardly extending longitudinal portion in which the pins 42 are retained in the locked position. When the locks 30 and 37 are disengaged the cover can be removed from the cradle assembly 23 by freeing the pins 42 from the slots 43 30 whereafter the dispenser assembly 13 may be removed after the plug-in connection between complementary connection parts 45 and 46 supported on the cradle assembly 23 and the dispenser assembly 13 respectively, have been freed from one another.

35     The plug-in connection 45 on the cradle assembly is connected by the cable 20 to the supervising CPU unit 18 and

thus when a respective dispenser assembly is located in the cradle assembly 23 and the connection made between the connections 45 and 46, it is also connected to the supervising CPU unit 18 for control of the stepper motors and 5 state sensors therein whereby dispensing of tickets from the fan-fold stack in the space 28 may be instigated by signals from the unit 18. The dispensing action is initiated by operation of a designated item key such as a key pad or button mounted in the cash register 12.

10       The stand alone machine 60 illustrated in Fig. 6 includes a dispenser assembly 61 mounted on a wheeled frame assembly 62 whereby it may be readily wheeled to a suitable location for selling tickets. The dispenser assembly 61 is similar to that described in Figs. 3, 4 and 5 however its 15 upper wall 59, in addition to containing the cover lock 63, contains a LED display 64, an ON/OFF switch 65, which is also suitably key operated, and a rocker switch 66 for dispensing individual tickets. A coin slot 58 for storage of coins is also provided.

20       A mechanical counter 67 is also mounted on the top wall 62 for maintaining a record of the total number of tickets dispensed. The top wall also includes a communications port 68 whereby the memory in the stand alone machine may be interrogated by a supervising CPU unit such as the unit 18 of 25 the previously described embodiment as well as a battery port 69 for an external power supply.

Each dispenser assembly 13/61 has a memory facility associated with the control of the stepper motors and state sensors. Suitably this is in the form of a button-like solid 30 state device in which the data is seeded with the unique serial number of the button and algorithms unique to each customer. This makes the button almost impossible to duplicate.

In the present application the button-like solid state 35 device keeps all data on the button as part of a printed

circuit located inside the dispenser assembly 13.

The dispenser assembly 13 will not operate without the button-like solid state device and all data relevant to the dispenser is kept in its memory. This system ensures all 5 data relevant to that ticket series remains with the dispenser assembly 13 when power is removed or the dispenser is moved or disconnected from the supervising CPU unit 18.

When the dispenser 61 is empty, data is down loaded from the button for accounting purposes and the dispenser assembly 10 61 is refilled. The monitored number of the tickets remaining in any one of the dispenser assemblies 13 may be monitored through the supervising CPU unit 18 which may be programmed to provide an alarm when ticket supplies are low or finished. New information including price, counts, type, 15 etc are then set back into the memory of the button-like device as required.

Referring to Figs. 8 and 9 it will be seen that tickets to be dispensed are stored in a removable cartridge 70 located in the storage space 28 between the side walls 26. 20 The cartridge 70 is channel shaped and includes a removable guide roller 71 supported between the opposed flanges 72 of the cartridge 70. A stack of tickets 73 in fan-fold arrangement can be inserted into the cartridge 70 so that the leading tickets pass from an upper portion of the fan-fold 25 stack between the guide roller 71 and the base web 75.

The side flanges 72 are suitably cut away at their lower ends adjacent the flange 75 so that the latter may engage over a wall 76 for retaining it in an operative position. A closure door 77 with suitable latching means 78 is hinged to 30 the back of one side wall 26 for securing the stacked tickets within the space 28. The tickets are fed from the space 28 about lower guide rollers 80 and upwardly through feed rollers 81 where the uppermost ticket 82 is exposed and is folded outwardly by arm 83 for severing and dispensing as is 35 defined in our co-pending International Patent Application

No. PCT/AU96/00662.

The overall width of the channel shaped cartridge 70 is less than the overall width between the side walls 26 so that a coin storage compartment communicating with the coin slot 5 58 may be formed at one side and a battery storage compartment at the other. The plug 46 is also provided at the bottom of the coin compartment for engagement with the complementary plug portion when the dispenser assembly 13 is located in its cradle assembly 23.

From the above it will be seen that a dispenser assembly 13/61 may be provided as a module which contains a known number of tickets ready for dispensing and a memory providing identification and recordal of relevant dispensing transactions. This module may be maintained by a supervisor 15 and provided to operatives at a checkout or with a mobile stand alone machine as illustrated in Fig. 6 to enable that operator to dispense tickets and suitably instant lottery tickets. The information in the memory may be downloaded at any stage to provide an audit trail with a view to locating 20 any discrepancies between revenue and ticket throughput.

The software contained within the supervising CPU unit 18 records the information illustrated in the screen print of Fig. 10. As shown it provides information storage facilities for up to 25 lanes of a supermarket and in respect of the 25 dispenser assembly 13 at each lane, it maintains the following information:-

the status of the lane being polled;  
the number of tickets that have been issued from that lane;  
30 the number of tickets requested by that lane;  
the number of credits remaining;  
the number of tickets remaining in that lane;  
an error message wherein a number indicates an error has occurred;  
35 a feed indication which indicates if there is a ticket

in or out of the vend position;  
a clamp and cut indicator which indicates the position  
of these the stepper motors for "home", "midway" or  
"extended";  
5 the travel speed the stepper motors as pre set in  
maintenance mode, and  
the name of the ticket game currently in that dispenser.

The other information on this screen is CURRENT DATE, CURRENT  
TIME, MAINTENANCE TOGGLE, SHOW ERROR FORM, PRINT REPORT FOR  
10 LANE BELOW and EXIT which is password protected.

The "Show error" screen is illustrated in Fig. 11 and  
indicates if an error occurs and the error number which  
indicates why the error occurred.

If the "maintenance toggle" is operated the maintenance  
15 menu which is password protected is displayed. The  
maintenance display is used in setting up the dispenser  
assembly 13 or for maintenance and can only be retrieved when  
the dispenser apparatus is in the supervised service station  
which corresponds to lane "0" which is a nominated supervised  
20 maintenance position and only maintenance personnel with the  
appropriate password may access the "maintenance" mode. Thus  
there can be no tampering of dispenser assemblies which are  
in use by operation of the supervising CPU unit 18.

However when a dispenser assembly is in lane "0", the  
25 screen of Fig. 12 will appear with the supervisor window  
displayed in Fig. 12a, which displays the serial number of  
the dispenser being interrogated, the number of remaining  
tickets, the code number for the particular game installed  
and buttons for ADD and REMOVE which enables the supervisor  
30 to enter the number of new tickets being installed as well as  
entering the number of unsold tickets being removed. A  
password protected exit button is also displayed.

If the maintenance mode is selected by the

maintenance toggle, the screen print illustrated in Fig. 12 appears to assist servicing of the dispenser apparatus 10. This screen displays the same information for all the lanes as is displayed in Fig. 10 but in addition includes the 5 maintenance window illustrated in Fig. 12 with maintenance facilities for independently controlling the operation of a dispenser assembly 13.

This password protected screen is typically used in setting up the dispenser apparatus 10 or for correcting an 10 error which may occur in use. At any time, a report may be printed such as the reports set out on page 16 herewith.

Similar functions are also provided for the stand alone machine 60 such as is illustrated in the screen prints of Figs. 13 and 14. This machine 60 that can be readily wheeled 15 to different locations and requires no external power.

However it maintains the features of the supermarket dispenser assembly 13. This dispenser 60 may be returned to a central station and an interface to be established through the coms port 68 which allows all the data collected in the 20 dispenser to be downloaded to a master computer for audit purposes.

As with the earlier described embodiment, this enables a serviceman or installer to independently operate the various stepper motors and state sensors or adjust their operation 25 for fine tuning the machine at installation or after service.

It is preferred that the dispenser units 13 are activated by a command from the supervising CPU unit 18 to dispense the appropriate number of tickets or other items once the selected quantity has been entered into the check-out station 11 by the relevant operator and communicated to the supervising CPU unit 18. Thus the checkout operator may key in the number of tickets required by depression of an appropriate key of the register to cause, through the CPU unit 18, actuation of the associated dispenser assembly 13 to 35 effect the dispensing of one or more tickets.

The dispenser apparatus 10 may be arranged so that the items are dispensed once the operator enters the amount tendered or a code indicating that payment has been effected. The supervisor CPU unit 18 may signal the operator when 5 restocking is required by calculating the number of items sold compared to the number of items stocked in the ticket holder, or alternatively, may include out-of-stock detection means for cross checking the number of items sold against the number stocked. The CPU unit 18 also monitors through the 10 cables 19 the checkout registers 12.

Where retail outlets include automatic restocking and reordering of items sold, the dispensing apparatus of the present invention may be incorporated into the stock control system of the retail outlet, or may be installed as a 15 separate stand alone system.

Each transaction is recorded by the CPU unit 18 to enable monitoring of the number of tickets being dispensed and the funds which should have been received for those tickets. If a dispensing unit 14 is removed from its cradle, 20 the CPU unit 18 will sense that removal and record the number of tickets which should be in the ticket holder 15 of the unit 14.

A display device 21 is preferably provided on or adjacent each checkout register 12 or counter 17 to display 25 the number of ticket dispensed or required to be dispensed. Thus if the operator keys four tickets into the register, the display will read four and will count down to zero as respective articles are dispensed. Alternatively, the display device 21 may count up as each ticket is dispensed.

30 It will of course be realised that the above has been given only by way of illustrative example of the invention and that all such modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as is 35 defined in the appended claims.

lane	Serial Number	date	Time	Issued	Credits	Requested	Stock	Game Code
10	842493200	19970316	083721	1	0	1	8,689	123
6	842493200	19970316	121104	1	0	1	8,486	123
6	842493200	19970316	121123	1	0	1	8,485	123
6	842493200	19970316	121133	1	0	1	8,484	123
5	842493200	19970316	121153	1	0	1	8,483	123
6	842493200	19970316	121212	2	0	2	8,481	123
6	842493200	19970316	121239	3	0	3	8,478	123
6	842493200	19970316	121304	3	0	3	8,475	123
6	842493200	19970316	121329	3	0	3	8,472	123
6	842493200	19970316	121354	3	0	3	8,469	123
6	842493200	19970316	121419	3	0	3	8,466	123
6	842493200	19970316	121446	3	0	3	8,463	123
6	842493200	19970316	121514	3	0	3	8,460	123
6	842493200	19970316	121539	3	0	3	8,457	123
6	842493200	19970316	121605	3	0	3	8,454	123
6	842493200	19970316	121630	3	0	3	8,451	123
6	842493200	19970316	121655	3	0	3	8,448	123
6	842493200	19970316	121720	3	0	3	8,445	123
6	842493200	19970316	121747	3	0	3	8,442	123
6	842493200	19970316	121813	3	0	3	8,439	123
6	842493200	19970316	121840	3	0	3	8,436	123
6	842493200	19970316	121907	3	0	3	8,433	123
6	842493200	19970316	121916	1	0	1	8,432	123
6	842493200	19970316	121946	1	0	1	8,431	123
18	842493200	19970316	122315	2	0	2	8,429	123
18	842493200	19970316	122415	2	0	2	8,427	123
18	842493200	19970316	122435	2	0	2	8,425	123
18	842493200	19970316	122455	2	0	2	8,423	123
18	842493200	19970316	122515	2	0	2	8,421	123
18	842493200	19970316	122536	2	0	2	8,419	123
18	842493200	19970316	122556	2	0	2	8,417	123
18	842493200	19970316	122616	2	0	2	8,415	123
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THE CLAIMS DEFINING THIS INVENTION ARE AS FOLLOWS:-

1. Dispensing apparatus including:-  
a dispenser assembly containing articles to be dispensed;
- 5 control means for controlling the dispensing of said articles by said dispenser assembly whereby during normal operation articles can be dispensed from said dispensing means only by operation of said control means, and monitoring means for monitoring and recording the 10 dispensing of articles from said dispenser assembly.
2. Dispensing apparatus as claimed in claim 1, wherein said control means includes an item key associated with a cash register for dispensing the selected item.
3. Dispensing apparatus as claimed in claim 1 or claim 2, 15 wherein the monitoring means logs each dispensing operation or transaction and includes a memory providing a searchable audit trail enabling sales to be selectively accounted for.
4. Dispensing apparatus as claimed in claim any one of the preceding claims, wherein the monitoring means and control 20 means include communication means operatively connecting each of a plurality of said dispenser assemblies to a central processing or supervising unit for monitoring and recording the dispensing of articles from each of the dispenser assemblies.
- 25 5. Dispensing apparatus as claimed in claim 4, wherein the or each dispenser assembly is suitably in the form of a dispensing module which can be releasably locked into an operative position in communication with the central processing or supervising unit.

6. Dispensing apparatus as claimed in claim 4 or claim 5, wherein each dispenser assembly is provided with an identifying means which may be read by the central processing or supervising unit so as to enable the central processing or 5 supervising unit to identify the dispenser assembly.

7. Dispensing apparatus as claimed in claim 5 or claim 6, and including a cradle assembly at each desired dispensing location for securely supporting a dispensing module and being hard wired to an associated cash register and the 10 central processing or supervising unit and having a plug-in connection for the supported dispensing module.

8. Dispensing apparatus as claimed in claim 7, wherein each cradle assembly is provided with an identification which is recorder by the central processing or supervising unit.

15 9. Dispensing apparatus as claimed in claim 7 or claim 8, wherein the interface between the central processing or supervising unit and each cash register is such that any cash sale keyed into the cash register in respect of an article to be dispensed is not registered in the cash register as a sale 20 and does not appear on the register printout or on a display which tallies sales made to a customer until acknowledgement is received from the dispenser assembly that the article has been dispensed.

10. Dispensing apparatus as claimed in claim any one of the 25 preceding claims, wherein the dispenser assembly is a dispenser module which may be securely preloaded with lottery tickets to be dispensed and wherein the number of tickets and/or their identification may be entered into the central processing or supervising unit with the identification of the 30 particular dispenser module whereby the number and/or identification of articles being dispensed may be recorded

against the relevant dispenser module.

11. Dispensing apparatus as claimed in claim any one of claims 7 to 10, and including a plurality of checkout stations in public areas each checkout station having a cash register and a cradle assembly and wherein each dispenser module is securely lockable to its supporting cradle assembly and said central processing or supervising unit is maintained in a private area.

12. Dispensing apparatus as claimed in claim any one of the 10 preceding claims and including a plurality of cash registers associated with respective checkout lanes and a removable dispenser assembly associated with each cash register and a service station to which a dispenser assembly may be relocated for servicing, and wherein said control means 15 includes a central processing unit which selectively interfaces with the controls of the dispenser assemblies including the dispenser assembly in the service station, said central processing unit having functions, which are separately password protected and which may be activated for 20 a dispenser in the service station, including a function for loading and unloading the dispenser with articles to be dispensed and a function for repair, checking and servicing the operation of the dispenser assembly in the service station.

25

13. A method of dispensing articles from or adjacent a cash register, said method including:-  
providing a dispenser assembly for holding a plurality of articles to be dispensed,  
30 providing control means between said dispenser assembly and said cash register, and  
operating said cash register to cause actuation of said dispenser assembly through said control means for dispensing

20

articles from said dispenser assembly.

14. A method as claimed in claim 13 when the dispenser assembly is one of a plurality of dispenser assemblies in dispensing apparatus as claimed in claim 12, the method  
5 including:-

operating the cash registers to cause operator controlled dispensing of articles adjacent the respective cash registers;

10 removing and replacing any dispenser assembly from its operating position adjacent a cash register when the dispenser assembly requires reloading or maintenance;

relocating the removed dispenser assembly to the service station, and as required,

allowing the authorised personnel possessing the  
15 appropriate password to reload or service the dispenser assembly in the service station.

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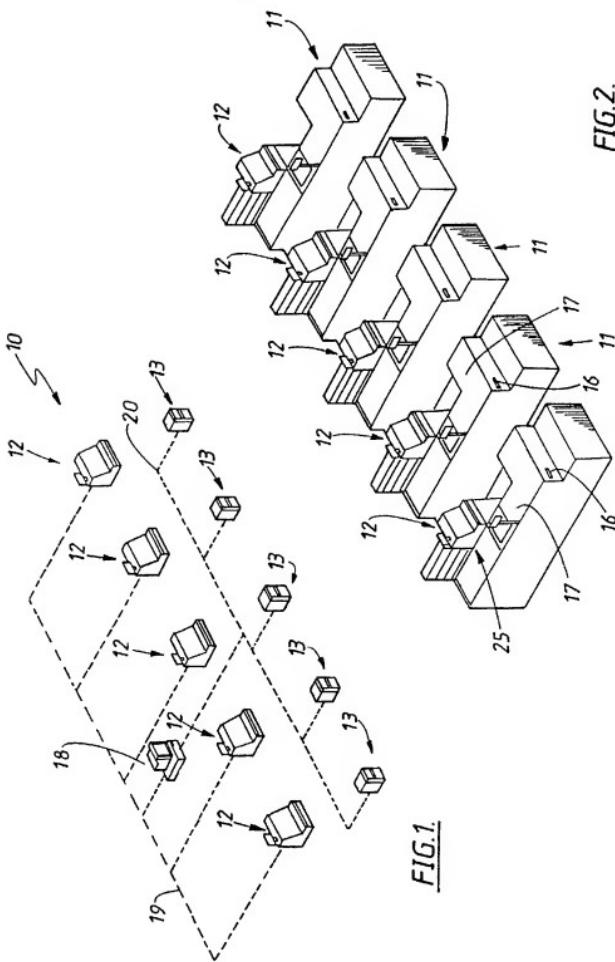
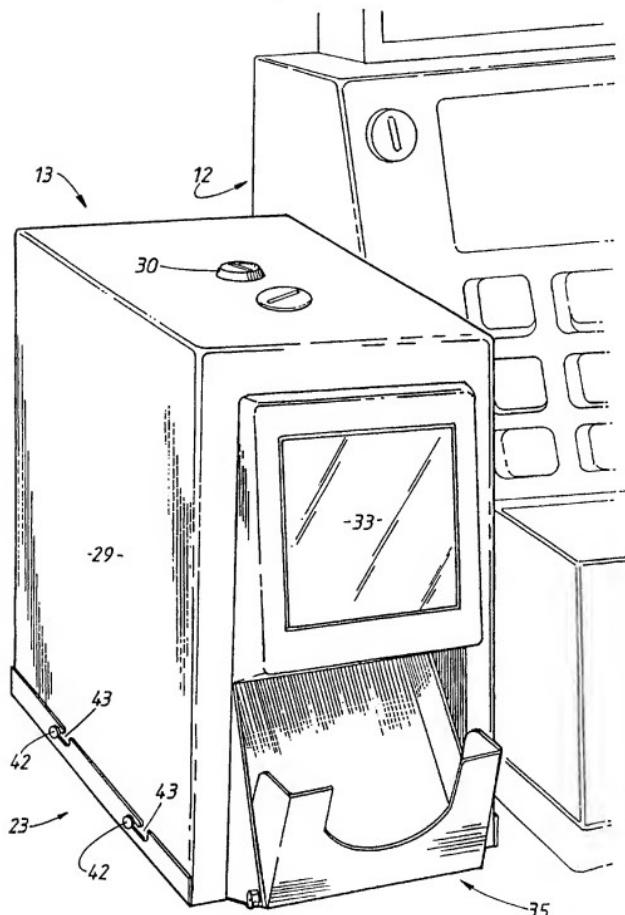


FIG. 1.

FIG. 2.

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FIG. 3.

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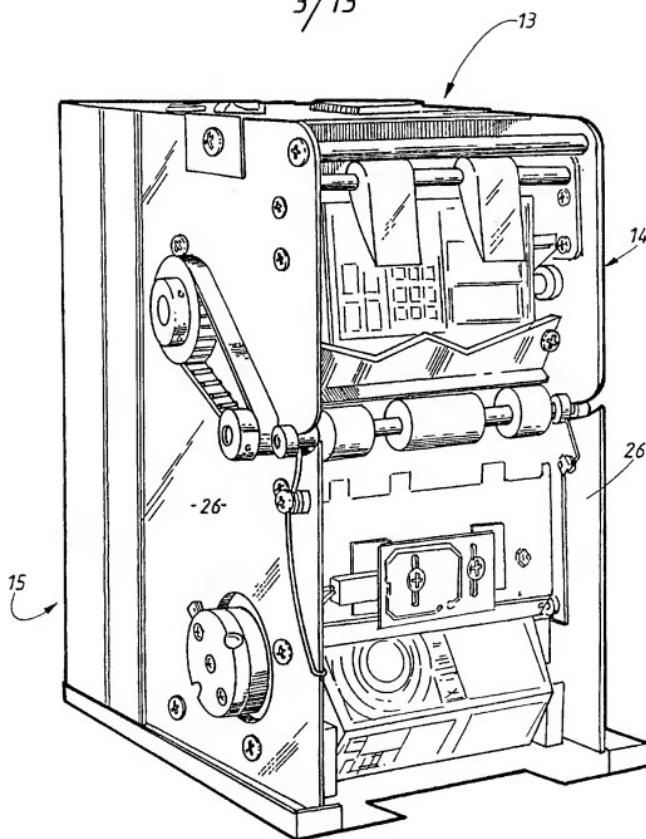


FIG. 4.

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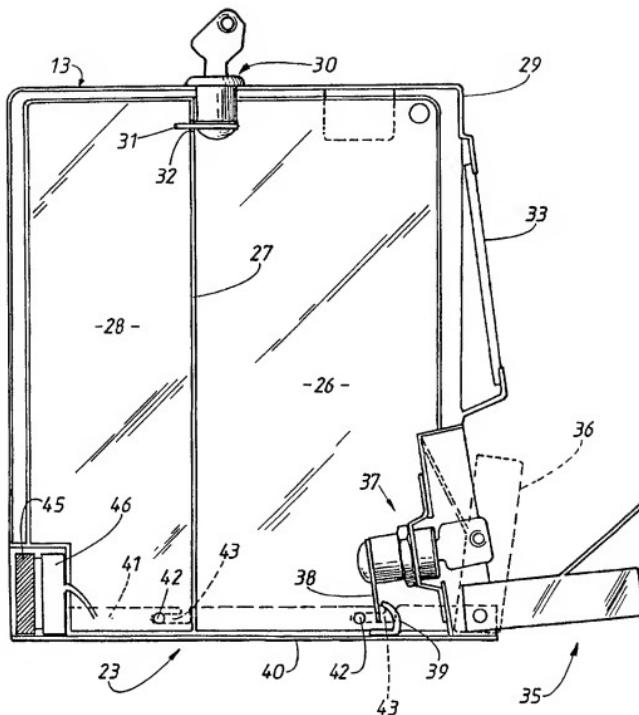


FIG. 5.

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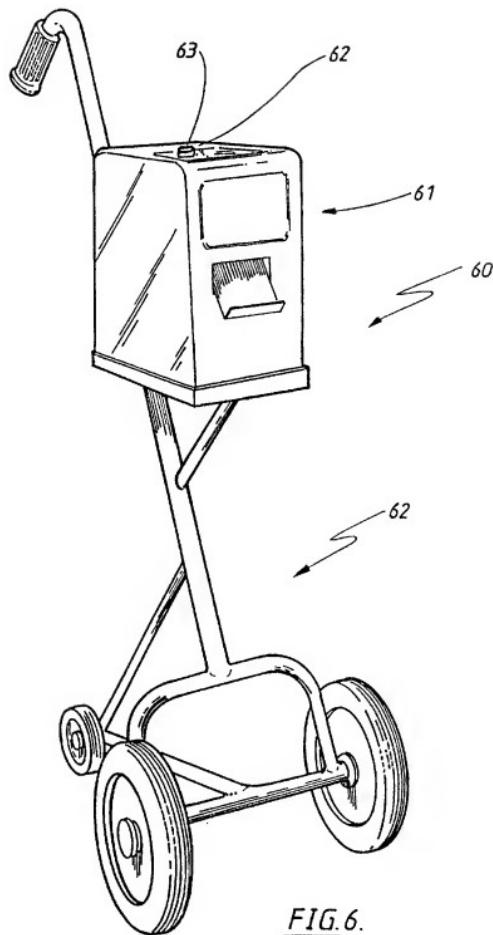
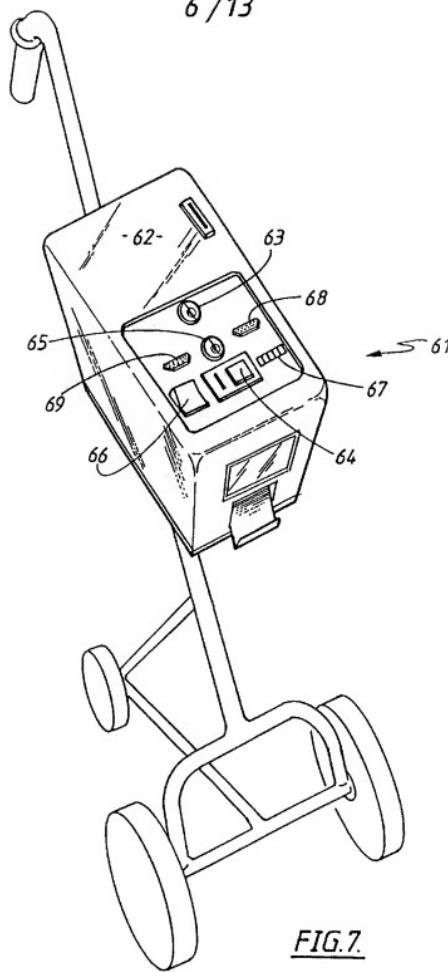
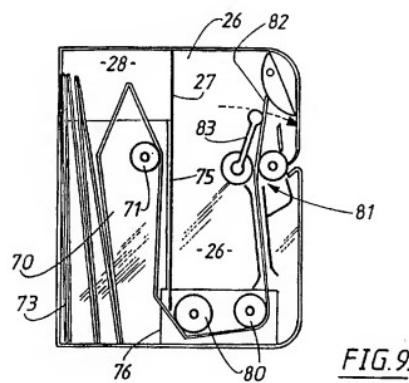
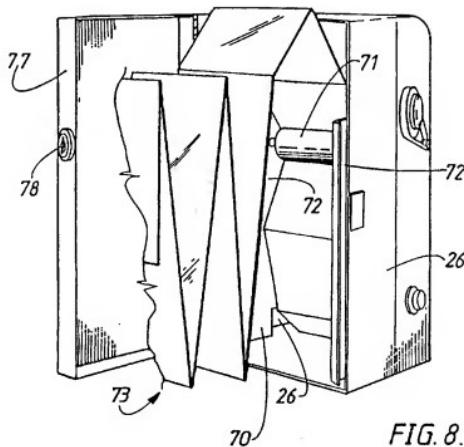


FIG. 6.

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FIG.7.

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Lottery Products Online Lane Dispenser Ver 2.1		Lane 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25																									
Status	Issued	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	
Request Credits	Stock	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Error	Feed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clamp	Cut	OUT	HM	HM																							
Ticket	Speed	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN	TN
Code		123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	

Current Date 03-26-1997

Current Time 21:52:40

Maintenance Toggle

Show Error Form

Print Report for lane below

Set the lane number to 0 to report on all Lanes

Text 1

Exit

FIG. 10.

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Last Error List x	
0	(000) No Errors
1	NA
2	NA
3	NA
4	NA
5	NA
6	NA
7	NA
8	NA
9	NA
10	NA
11	NA
12	NA
13	NA
14	NA
15	NA
16	NA
17	NA
18	NA
19	NA
20	NA
21	NA
22	NA
23	
24	
25	

FIG. 11.

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FIG. 12.

Lottery Product's Online Lane Dispenser Ver 2.1

Lane	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Status																										
Issued	2																									
Request	2																									
Credits	0																									
Stock	387																									
Error	0																									
Feed	OUT																									
Clamp	HH																									
Cut	HH																									
Ticket	IN																									
Speed	123																									
Code	187																									

Maintenance	Current Date	03-26-1997	Current Time	21:52:40
Feed Up	Comms Power			
Feed Down	On	Off	<input checked="" type="radio"/>	
Feed Motor Off			<input type="radio"/>	
Clamp Off	Receive			
Clamp Stop				
Clamp Home	Ask Tic.1			
Cut Motor on	Ask Issues			
Cut motor off				
Cut Home	Clear Issued			
	Hickets			
	Clear Errors			
Reset Init Buttons				
	Init Stock 500			
	Init Speed 125			
	Init Game Code 125			

0

Set the lane number to 0 to repair on all lanes

Text 1

Exit

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FIG. 12a.

Lane	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Status	OK																									
Issued	0																									
Request	0																									
Credits	0																									
Stock	773																									
Error	OK																									
Feed	IN																									
Clamp	HM																									
Cut	HM																									
Ticket	Y																									
Speed	775																									
Code	83																									

Lottery Products Online Lane Dispenser Ver.21

Current Date  Current Time

Maintenance

Show Error

Print Report

Set the lane number to 0 to report on all Lanes

The machine may be removed now

Update Mechanism

Please select the action you wish to take below

Current Stock

Current Game Code

Serial Number

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FIG.13.

Lottery Products Mobile Ver.1.1									
Status	Issue	Request	Credits	Stack	Error	Feed	Clamp	Cui	Ticket
OK	<input type="button" value="0"/>	<input type="button" value="0"/>	<input type="button" value="0"/>	<input type="button" value="473"/>	<input type="button" value="1"/>	<input type="button" value="IN"/>	<input type="button" value="HM"/>	<input type="button" value="HM"/>	<input type="button" value="Y"/>
									<input type="button" value="125"/>
									<input type="button" value="83"/>
<input type="button" value="Maintenance"/> <input type="button" value="Toggle"/> <input type="button" value="Print Menu"/>									
<b>Update Mechanism</b> Please select the action you wish to take below.									
<input type="button" value="Serial Number"/> <input type="button" value="8C24C32000"/> <input type="button" value="Current Stack"/> <input type="button" value="473"/> <input type="button" value="Current Game Code"/> <input type="button" value="B3"/>									
<input type="button" value="Add"/> <input type="button" value="Remove"/>									
<b>The machine may be removed now</b> <input type="button" value="Text 1"/>									

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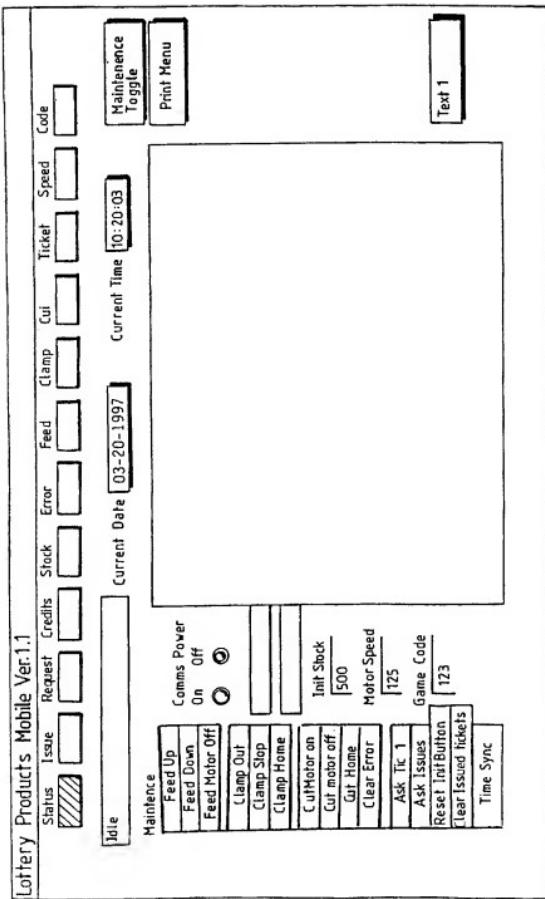


FIG. 14.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/AU 97/00221

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int Cl <sup>6</sup> G07C 15/00, G07F 7/02, G07B 3/00, 5/04, G07G 1/12, 1/14		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC G07C 15/00, G07F 7/02, G07B 3/00, 5/04, G07G 1/12, 1/14		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU:IPC as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Derwent Dispensc, vend, control, manage, Japio govern, regulate, monitor, record, register		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	AU, 45490/93 A (ROTHMANS HOLDINGS LIMITED) 14 February 1994 Whole specification	1-5, 13
X	AU, 45692/79 A (COWELL WS LIMITED) 18 October 1979 page 4, lines 5-21, page 8, lines 7-17, page 20, lines 3-10	1
X	US, 4893705 A (BROWN) 16 January 1990 Abstract, Fig 1	1
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C		<input checked="" type="checkbox"/> See patent family annex
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>		
Date of the actual completion of the international search 5 June 1997	Date of mailing of the international search report <b>13 JUN 1997</b>	
Name and mailing address of the ISA/AU AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No.: (06) 285 3929	Authorized officer <b>M.E. DIXON</b> Telephone No.: (06) 283 2194	

## INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/AU 97/00221

DOCUMENTS CONSIDERED TO BE RELEVANT		
C (Continuation)	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US, 3541309 A (CUTTER) 17 November 1970 Col 2, line 66 - Col3, line 73, Fig 1	1,2,4,13
X	US, 3023851 A (STILLER) 6 March 1962 Col 1, lines 17-34, 47-53, Fig 1	1,2,13
X	GB, 2180527 A (TM GROUP LIMITED) 1 April 1987 Abstract, page 1, lines 105 - page 2, line 111, page 4, lines 32-38	1-3,13
X	GB, 1152831 A (CROSSFIELD ELECTRONICS LIMITED) 21 May 1969 page 1, line 53 - page 2, line 9, page 3, lines 77-87	1,4,5,6
X	WO, 90/07166 A (WELLCOME LABELS CORPORATION) 28 June 1990 page 6, line 16 - page 10, line 30, fig 1	1
X	WO, 88/00741 A (BAR VENDER, INC) 28 January 1988 Abstract, page 4, lines 24-30, page 5, lines 4-24, page 5, line 33 - page 6, line 6	1,3,4
X	DE, 4122708 A (PAEZ MONTERO) 3 December 1992 Col 2 line 52 - col 4, line 29, figs 1,2	1-6
A	WO, 86/00737 A (SELLMATIC OY (FI/FI)) 30 January 1986 Whole specification	1,10
A	EP, 0586330 A (SINTRA HOLDING AG) 9 March 1994	
A	Patent Abstracts of Japan, P339, page 75, JP, 59-188776 A (TOKYO DENKI KK) 26 October 1984	

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International Application No.  
**PCT/AU 97/00221**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	4893705	US	5133441				
WO	9007166	US	5038293				
WO	8800741	US	4755957				
WO	8600737	AU	46714/85	CA	1246720	EP	221072
		FI	69718				

END OF ANNEX